Alberta
ENVIRONMENT

CODE OF PRACTICE FOR

PIPELINES AND TELECOMMUNICATION LINES

CROSSING A WATER BODY

Water Act – Water (Ministerial) Regulation

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ALBERTA ENVIRONMENT

CODE OF PRACTICE FOR PIPELINES AND TELECOMMUNICATION LINES CROSSING A WATER BODY [made under the *Water Act* and *the Water (Ministerial) Regulation*]

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Definitions

1(1) All definitions in the *Water (Ministerial) Regulation* and in section 1 of the *Water Act* apply except where expressly defined in this Code of Practice.

(2) In this Code of Practice,

(a) "this Code of Practice" means the *Code of Practice for Pipelines and Telecommunication Lines Crossing a Water Body*, as amended or replaced from time to time;

(b) "to carry out a works" includes to commence or continue the works;

(c) "class" means the class of a water body that is specified in section 7, or that is designated by a class symbol on a map that is listed in Schedule 6;

(d) "Director" means, for the purposes of this Code of Practice, a Director as specified in Schedule 5;

(e) "emergency" means a situation where there is an imminent risk to the aquatic environment, public health or safety, or an imminent risk of structural failure to a pipeline crossing or telecommunication line crossing;

(f) "fish" means fish used for domestic, sport and commercial purposes, and fish of special concern, including but not limited to rare, endangered, threatened or vulnerable species;

(g) "frac-out" means a leakage of pressurized drilling fluid into a water body or at a location where the fluid may enter a water body;

(h) "isolation method" means a pipeline crossing or telecommunication line crossing technique in which there is an excavation of a trench in the bed or banks of a water body, and isolation of the surface water in the water body from the excavation area, including but not limited to fluming, dam and pump, high volume pump bypass and two stage coffer dams;

(i) "map" means a map listed in Schedule 6, and includes the legends on a map;

(j) "mapped water body" means a water body that appears on a map that is listed in Schedule 6;

(k) "open cut method" means a pipeline crossing or telecommunication line crossing technique in which there is an excavation of a trench in the bed or banks of a water body, including but not limited to excavation by plow, bucket or wheel trencher, hoe, yo yo dragline or dredge;

(l) "owner" means

(i) the person who owns a pipeline crossing or a telecommunication line crossing, or

(ii) a successor, assignee, executor, administrator, receiver, receiver-manager, liquidator or trustee of a person described in (i),

(iii) a person who acts as the principal or agent of a person described in (i) or (ii);

(m) "pipeline crossing" means a pipe under a water body that is or will be constructed for the transmission of any substance, and includes any associated permanent or temporary structure that is or will be constructed for the installation, maintenance or protection of the pipe, including but not limited to:

(i) pump bypass and fluming systems,

(ii) structures for erosion protection,

(iii) structures that are required to meet clause (a) in Part 1 of Schedule 2 that are located inside the right of way of a pipeline crossing,

but does not include:

(iv) a telecommunication line crossing,

(v) a watercourse crossing for vehicles or equipment as defined in the *Code of Practice for Watercourse Crossings*,

(vi) structures to realign the channel of a water body or to divert water from the site of a pipeline crossing that require an authorization under the *Water Act*, or

(vii) structures that are required to meet clause (a) in Part 1 of Schedule 2 that are located outside the right of way of a pipeline crossing and that require an authorization under the *Water Act*;

(n) "plan" means a plan specified in section 6;

(o) "productive capacity" means the natural capability of habitats that comprise the aquatic environment to produce healthy fish that are safe for human consumption, or to support or produce the naturally occurring diversity of aquatic organisms upon which fish depend;

(p) "professional engineer" means a professional engineer as defined in the *Engineering, Geological and Geophysical Professions Act*;

(q) "qualified aquatic environment specialist" means a person who

(i) possesses

(A) a post-secondary degree in biological sciences,

(B) a technical diploma in biological sciences, or

(C) educational equivalencies;

(ii) has a detailed knowledge of the aquatic environment, including fish and fish habitat, management and assessment; and

(iii) is currently experienced with

(A) fisheries and aquatic environment assessment methods, and

(B) the determination of mitigation measures required to maintain the productive capacity of the aquatic environment, including fish habitats in Alberta that may be adversely affected by the carrying out of works in and adjacent to the water, bed and shore of water bodies;

(r) "restricted activity period" means the time period during which fish migration, fish spawning, egg incubation, fry emergence and early fry development are likely to occur in a water body;

(s) "telecommunication line crossing" means a pipe, cable or an arrangement of lines of wire or other conductors by which telephone or other kinds of communications are transmitted and received that is or will be installed under a water body, and includes any permanent or temporary structure that is constructed for the installation, maintenance and protection of the pipe, cable or arrangement of lines of wire or other conductors, including but not limited to:

(i) pump bypass and fluming systems,

(ii) structures for erosion protection,

(iii) structures that are required to meet clause (a) in Part 1 of Schedule 2 that are located inside the right of way of a telecommunication line crossing,

but does not include

(iv) a pipeline crossing,

(v) a crossing for vehicles or equipment as defined in the *Code of Practice for Watercourse Crossings*,

(vi) structures to realign the channel of a water body or to divert water from the site of a telecommunication line crossing and that require an authorization under the *Water Act*, and

(vii) structures that are required to meet clause (a) in Part 1 of Schedule 2 that are located outside the right of way of a telecommunication line crossing and that require an authorization under the *Water Act*;

(t) "trenchless method" means a pipeline crossing or telecommunication line crossing technique in which there is no trenching of the bed and banks of a water body, including but not limited to directional drilling, boring, punching, tunnelling and pipe ramming;

(u) "uncoded water body" means a water body that appears on a map listed in Schedule 6, and that has no class symbol specified on the map;

(v) "unmapped water body" means a water body that does not appear on a map listed in Schedule 6;

(w) "UTM coordinates" means coordinates that use the Universal Transverse Mercator grid to identify or plot the specific location of a site or object;

(x) "water body" means, for the purpose of this Code of Practice, a water body with defined bed and banks, whether or not water is continuously present, but does not include fish bearing lakes;

(y) "works" means the placement, construction, installation, maintenance, replacement or removal of all or part of a pipeline crossing or telecommunication line crossing, or any activity associated with the placement, construction, installation, maintenance, replacement or removal, and includes works for both a pipeline crossing or telecommunication line crossing except where otherwise specified.

(3) Notwithstanding the definition of "owner" in subsection (2)(l), where there is a requirement for an owner to provide notice to the Director under this Code of Practice, and there is more than one owner of a pipeline crossing or telecommunication line crossing, one owner may provide notice on behalf of the other owners in order to meet such a requirement.

Bound by Code of Practice

2 An owner and any person who carries out a works shall comply with the requirements set out in this Code of Practice.

Notice to the Director

3(1) For the purposes of section 4 of the *Water (Ministerial) Regulation*, an owner must provide notice to the Director, in writing, at least 14 calendar days before any works are carried out, or in accordance with the form and manner and number of days specified in writing by the Director.

(2) The written notice under subsection (1)

(a) must contain the information specified in Schedule 1, unless otherwise specified in writing by the Director; and

(b) authorizes an owner to carry out a works in accordance with this Code of Practice for the period of time specified in the notice.

Notice where the works are not completed within time period

4(1) Where notice is provided in accordance with section 4(1) of the *Water (Ministerial) Regulation* and section 3, and the works have not been commenced or completed within the time period specified in the notice, the notice is no longer valid, and an owner must provide a new notice prior to carrying out the works.

(2) The new notice under subsection (1) must provide

(a) the new date for the commencement or continuation of the works,

(b) the anticipated duration of time that activities related to the works will occur in a water body, in accordance with clause (h) of Schedule 1,

(c) any information that has changed from the information provided in the original notice, and

(d) in cases where the works has commenced but has not been completed by the time period stated in the original notice, the new expected completion date of the works.

Emergency

5(1) Where there is an emergency and it is not possible for an owner to provide notice in accordance with section 3, an owner may take appropriate measures to deal with the emergency and must notify the Director of the emergency within 24 hours of becoming aware of the emergency.

(2) Notice under subsection (1) must contain the information specified in clauses (a), (b), (d) and (e) of Schedule 1, the legal description of the land on which the pipeline crossing or telecommunication line crossing is located, and any other information regarding the nature of the emergency that is available to the owner at the time.

(3) Within 30 days of completion of the works required to deal with the emergency, the owner must provide to the Director the following information:

(a) information specified under clause (c) in Schedule 1,

(b) a description of the construction methods and conditions as described in section 8 and Schedule 3, if applicable, that were used in carrying out the works,

(c) a description of measures taken to meet the appropriate requirements of Part 1 of Schedule 2, section 8 and Schedule 3, including a statement whether the works incorporated the specifications and recommendations of a qualified aquatic environment specialist.

Plans

6(1) Before notice is provided to the Director under section 3, an owner must prepare a plan for the works that

(a) meets the design and construction standards specified in Part 1 of Schedule 2; and

(b) contains or incorporates the following:

(i) for a pipeline crossing, except for the removal of all or part of a pipeline crossing, the written information and specifications specified in Part 2 of Schedule 2 that have been prepared by a professional engineer, and that contain the certification and stamp and signature of the professional engineer as required under section 10(2);

(ii) for a telecommunication line crossing, or the removal of all or part of a pipeline crossing or telecommunication line crossing, the written information and specifications specified in Part 2 of Schedule 2 that have been prepared by the owner, and that contain the certification of the owner as required under section 10(3);

(iii) in addition to the requirements specified under clause (a) and (b)(i) and (ii), for a pipeline crossing or telecommunication line crossing,

(A) the construction methods and conditions, including any written specifications and recommendations of a qualified aquatic environment specialist, to be used in carrying out the works as determined in accordance with section 8 and 9 and Schedule 3;

(B) an outline of the contingency measures to be taken in the event of potential problems resulting from adverse conditions or crossing method failures, and that take into account any restricted activity periods; and

(C) in addition to any monitoring measures contained in the written specifications and recommendations of a professional engineer, owner or qualified aquatic environment specialist,

(1) specification of the monitoring measures that will, during the anticipated life of the pipeline crossing or telecommunication line crossing, meet the requirements of this Code of Practice; and

(2) specification of frac-out monitoring measures, where applicable.

(2) An owner and a person who carries out a works must comply with the plan prepared for the works under subsection (1), except where measures must be taken to deal with an emergency.

(3) Notwithstanding subsection (1), after notice to the Director has been provided in accordance with section 3(1), an owner may change a plan as long as the change complies with this Code of Practice and notice of the change is provided to the Director in accordance with section 3 and Schedule 1.

(4) Where a change is made to a plan under subsection (3), all of the provisions of this Code of Practice apply to the change as if the change had been included in the original plan under subsection (1).

Maps and class of water bodies

7(1) A map that is listed in Schedule 6 forms part of this Code of Practice and
- (a) designates the class of a mapped water body as Class A, B, C or D,
- (b) specifies the restricted activity period for classes of water bodies,
- (c) provides the location of Class A and B water bodies, and
- (d) specifies special conditions for some water bodies,

for the purposes of this Code of Practice.

(2) The class of a mapped water body is the class that is designated by a class symbol on a map.

(3) The class of an uncoded water body is as follows:
- (a) Class D, unless otherwise specified in clause (b);
- (b) where an uncoded water body enters a mapped water body that is a Class A, B or C water body, the portion of the uncoded water body for a distance of 2 kilometres upstream from the mouth of the uncoded water body is the same class as the mapped water body that is entered.

(4) The class of an unmapped water body is as follows:
- (a) where an unmapped water body enters a mapped Class A water body, the unmapped water body
  - (i) is Class A for the portion of the unmapped water body for a distance of 2 kilometres upstream from the mouth of the unmapped water body, including where the unmapped water body is dry or frozen to the bottom at the time of the works; and
  - (ii) is Class B for any other portion of the unmapped water body;
- (b) where an unmapped water body enters a mapped Class B water body, the unmapped water body
  - (i) is Class B for the portion of the unmapped water body for a distance of 2 kilometres upstream from the mouth of the unmapped water body, including where the unmapped water body is dry or frozen to the bottom at the time of the works; and
  - (ii) is Class C for any other portion of the unmapped water body;
- (c) where an unmapped water body enters a mapped Class C water body, the unmapped water body
  - (i) is Class C for the portion of the unmapped water body for a distance of 2 kilometres upstream from the mouth of the unmapped water body; and
  - (ii) is Class C for any other portion of the unmapped water body, and the requirements regarding restricted activity periods under section 9 (5)(b) apply;
- (d) where an unmapped water body enters a mapped Class D water body, the unmapped water body is Class D;
- (e) where an unmapped water body enters a fish bearing lake, whether or not the fish bearing lake appears on a map, the unmapped water body is Class C, and the requirements regarding restricted activity periods under section 9(6) apply.

Construction methods and conditions

8(1) Works may be carried out only in the following circumstances, and in addition to complying with the requirements for restricted activity periods under section 9, the construction methods and conditions must be determined and carried out in accordance with the following requirements:

(a) for works that take place or will take place in or under a **Class A** water body,

(i) the construction of a new pipeline crossing or new telecommunication line crossing **is not allowed**;

(ii) the repair or maintenance of an existing pipeline crossing or telecommunication line crossing must be done in accordance with the written specifications and recommendations of a qualified aquatic environment specialist; and

(iii) where the replacement of a section of the pipeline is required, it must be replaced with a pipeline of no larger diameter than existed before;

(b) for works that take place or will take place in or under a **Class B** water body, the construction methods and conditions for carrying out the works that must be used, **in order of preference,** are as follows:

(i) **the trenchless method,** carried out in accordance with Part 2 of Schedule 3, including where the water body is dry or frozen to the bottom at the time of the works, with or without the written specifications and recommendations of a qualified aquatic environment specialist;

(ii) **the isolation method** carried out in accordance with Part 3 of Schedule 3 and in accordance with the written specifications and recommendations of a qualified aquatic environment specialist, only if

(A) the trenchless method under clause (i) cannot be met, or

(B) the isolation method will meet the requirements of clause (a) in Part 1 of Schedule 2,

as determined in accordance with subsection (3); or

(iii) **the open cut method**, carried out in accordance with Part 4 of Schedule 3 and in accordance with the written specifications and recommendations of a qualified aquatic environment specialist, only if

(A) the isolation method under clause (ii) cannot be met, or

(B) the open cut method will meet the requirements of clause (a) in Part 1 of Schedule 2,

as determined in accordance with subsection (3);

(c) for works that take place or will take place in or under a **Class C** water body, the construction methods and conditions for carrying out the works that must be used, **in order of preference**, are as follows:

(i) **the isolation method** carried out in accordance with Part 3 of Schedule 3, with or without the written specifications and recommendations of a qualified aquatic environment specialist if the work is carried out in accordance with the requirements for restricted activity periods under section 9;

(ii) **the open cut method**

(A) carried out in accordance with Part 4 of Schedule 3 and in accordance with the written specifications and recommendations of a qualified aquatic environment specialist, or

(B) if the water body is dry or frozen to the bottom at the time of the works, carried out in accordance with Part 4 of Schedule 3, with or without the written specifications and recommendations of a qualified aquatic environment specialist,

only if

(C) the isolation method under clause (i) cannot be met, or the open cut method will meet the requirements of clause (a) in Part 1 of Schedule 2, as determined in accordance with subsection (3);

(d) for works that take place or will take place in or under a **Class D** water body, the construction methods and conditions that may be used are **the isolation method** or the **open cut method** carried out in accordance with Part 3 and Part 4 of Schedule 3, respectively, with neither method requiring the written specifications and recommendations of a qualified aquatic environment specialist.

(2) Notwithstanding any other provision in this section or Schedule 3, the **trenchless crossing method** may be used in place of other construction methods and conditions described in this section for any class of water body, with or without the written specifications and recommendations of a qualified aquatic environment specialist.

(3) For the purposes of subsection (1)(b) and (c),

(a) a professional engineer or other qualified person must determine whether a construction method and condition cannot be met, taking into account the technical or environmental feasibility of the construction method or condition;

(b) a qualified aquatic environment specialist must determine whether a construction method and condition will meet the requirements of clause (a) in Part 1 of Schedule 2.

Restricted activity periods

9(1) Unless otherwise authorized under this section, works must not be carried out within any applicable restricted activity period.

(2) Subject to subsections (3), (4), (5) and (6), works

(a) must be carried out for mapped Class A water bodies, within the time period recommended by a qualified aquatic environment specialist;

(b) must be carried out for the isolation or open cut method in mapped Class B and C water bodies, outside the restricted activity period specified on the applicable map, unless a qualified aquatic environment specialist determines that the works can be carried out within the restricted activity period and still meet clause (a) in Part 1 of Schedule 2;

(c) may be carried out for Class D water bodies, at any time.

(3) Where an unmapped water body enters a mapped Class A water body,

(a) the works must be carried out within the period recommended by a qualified aquatic environment specialist for the portion of the unmapped water body for a distance of 2 kilometres upstream from the mouth of the unmapped water body;

(b) for any other portion of the unmapped water body than that specified in clause (a),
(i) the unmapped water body has the restricted activity period of the nearest mapped Class B or C water body entering the mapped Class A water body, or
(ii) if there is no mapped water body entering the mapped Class A water body, has the restricted activity period for the mapped Class B or C water body that is immediately downstream of the mapped Class A water body;

(4) Where an unmapped water body enters a mapped Class B water body, the restricted activity period is the restricted activity period for the mapped Class B water body.

(5) Where an unmapped water body enters a mapped Class C water body,
(a) the restricted activity period for the portion of the unmapped water body for a distance of 2 kilometres upstream from the mouth of the unmapped water body, is the restricted activity period for the mapped Class C water body, and
(b) for any other portion of the unmapped water body than that specified in clause (a),
(i) where there is no documented evidence of fish presence in the unmapped water body, there is no restricted activity period, or
(ii) where there is documented evidence of fish presence in the unmapped water body, the restricted activity period is the restricted activity period of the nearest mapped water body that enters the mapped Class C water body.

(6) Where an unmapped water body enters a fish bearing lake, whether or not the fish bearing lake appears on a map, the restricted activity period for the unmapped water body,
(a) is the same as that specified for the nearest mapped water body entering the fish bearing lake,
(b) if there is no mapped water body entering the fish bearing lake, is the same as that specified for the mapped outlet water body of the fish bearing lake, or
(c) if there is no mapped outlet water body of the fish bearing lake, is the same as that specified for the nearest mapped water body that is designated as a mapped Class C water body.

(7) A qualified aquatic environment specialist must consider any restricted activity period and must meet the requirements of Schedule 4 in preparing any written specifications and recommendations.

Certification

10(1) Where a qualified aquatic environment specialist has prepared specifications and recommendations in a plan under section 6(1)(b) for a works, the qualified aquatic environment specialist must certify in writing that the written specifications and recommendations prepared by the specialist meet the requirements of clause (a) in Part 1 of Schedule 2.

(2) For works associated with a pipeline crossing, a professional engineer must certify in writing that the written specifications prepared by the engineer for a plan under section 6(1)(b) meet the design and construction standards specified in clauses (b), (c) and (d) in

Part 1 of Schedule 2, and the design drawings must include the stamp and signature of the professional engineer.

(3) For works associated with a telecommunication line crossing, or the removal of all or part of a pipeline or telecommunication line crossing, an owner must certify in writing that the information and written specifications included in the plan under section 6(1)(b) meet the design and construction standards specified in Part 1 of Schedule 2.

(4) All certifications referred to under subsection (1), (2) and (3) must be prepared prior to the provision of notice under section 3.

(5) After the works has been completed, an owner must within one year of the date of completion of the works, certify in writing that
(a) the plan prepared under section 6 was followed in carrying out the works, and
(b) the design and construction standards of Part 1 of Schedule 2 have been met,
and retain the certification.

Reporting

11(1) A person involved in carrying out a works must, within 24 hours, report by telephone, facsimile or e-mail to the Director and an owner, any contravention of this Code of Practice including possible environmental impacts resulting from the contravention and initial actions taken to mitigate the contravention.

(2) An owner must, within 7 calendar days of receiving a report of a contravention under subsection (1), or within another time period specified in writing by the Director, provide to the Director a written report that contains the following information:
(a) a description of the contravention;
(b) an explanation as to why the contravention occurred;
(c) a summary of all preventative measures and actions that were taken prior to the contravention;
(d) a summary of all measures that were taken to mitigate the initial damage and proposed measures to address any remaining problems related to the contravention;
(e) the names, addresses, phone numbers and responsibilities of all persons responsible for carrying out the works at the time that the contravention occurred; and
(f) proposed preventative measures designed to prevent future contraventions.

Record keeping and information availability

12(1) An owner must compile and retain the following records within the time period specified in subsection (2);
(a) the names, addresses and phone numbers of the owners of the pipeline crossing or telecommunication line crossing;

(b) a copy of the plan prepared for the pipeline crossing or telecommunication line crossing;
(c) any as built plans or as constructed plans, if such as built or as constructed plans were prepared;
(d) the time period over which the carrying out of the works occurred, including:
(i) the start and completion dates, and
(ii) the duration of time each day that the work occurred in the water body;
(e) all photographs or video-recordings taken of the pipeline crossing or telecommunication line crossing before and after the carrying out of the works;
(f) where written specifications and recommendations of a qualified aquatic environment specialist have been included in the plan, the curriculum vitae and relevant experience of the qualified aquatic environment specialist; and
(g) a copy of all certifications referred to in section 10.

(2) An owner must meet the following time requirements for the preparation or compilation of the records specified in subsection (1), unless otherwise specified in writing by the Director:
(a) a plan under section 6 must be prepared prior to providing notice to the Director under section 3;
(b) the curriculum vitae and relevant experience of the qualified aquatic environment specialist must be compiled prior to providing notice to the Director under section 3;
(c) for records referred to in subsection (1)(a), (c), (d) and (e), records must be compiled within 3 months of completion of the works or within another time period specified by the Director;
(d) for certifications referred to in subsection (1)(g), records must be compiled within the time periods specified in section 10.

(3) An owner must retain all records referred to in subsection (1) for one year after the abandonment or completion of the removal from the pipeline crossing or the telecommunication line crossing of:
(a) all pipes for the transmission of any substance; and
(b) all pipes or cables or arrangements of lines of wire or other conductors by which telephone or other kinds of communications are or have been transmitted and received.

(4) An owner must, within the time period specified in writing by the Director, provide to the Director any requested information or records retained under subsection (1).

Monitoring of works

13(1) The owner must monitor a pipeline crossing or telecommunication line crossing in accordance with the plan prepared under section 6 to ensure that the requirements of this Code of Practice are met over the operational life span of the crossing.

(2) The owner must, for water bodies that are designated as Class A, B or C water bodies, take photographs or video-recordings of the water body at a pipeline crossing or

telecommunication line crossing site before the works are commenced and after the works are carried out, as follows:

(a) one or more photographs or video-recordings upstream from the crossing site;

(b) one or more photographs or video-recordings downstream from the crossing site; and

(c) two or more photographs or video-recordings at the crossing site, one of each bank taken from the opposite bank.

Guidelines

14 The Department may publish Guidelines to assist in the interpretation and implementation of this Code of Practice, however such Guidelines do not form part of this Code of Practice.

Effective date

15 This Code of Practice comes into force on April 1, 2000.

Code of Practice review and amendment

16 Alberta Environment may institute a review and amendment of this Code of Practice at any time, however this Code of Practice will be reviewed by April 1, 2003.

SCHEDULE 1

Notice to the Director
(Section 3)

Information that must be contained in a notice for the purposes of section 3:

(a) the name, address and phone number of at least one owner of the pipeline crossing or telecommunication line crossing;

(b) the name and phone number of the contact person;

(c) a map, diagram, or air photo that shows the pipeline crossing or telecommunication line crossing location in relation to the boundaries of the quarter section that the crossing is located in, including the legal description of the land and the name of the water body (if named) that is crossed, and the UTM coordinates, if available, on which the pipeline crossing or telecommunication line crossing is located;

(d) the diameter (in millimetres of the pipe, conduit or cable or arrangement of lines or other conductors) to be constructed at the pipeline crossing or telecommunication line crossing;

(e) where the works are for a pipeline crossing, the substances to be carried by the pipe;

(f) the construction methods and conditions determined in accordance with section 8, 9 and Schedule 3 that will be used in carrying out the works, including, where applicable, the rationale for not using the preferred construction method referred to in sections 8(1)(b)(i) and (ii) and 8(1)(c)(i);

(g) whether the works to be carried out will incorporate the specifications and recommendations prepared by a qualified aquatic environment specialist, and if so, the name of the qualified aquatic environment specialist, and consulting company name, if applicable;

(h) the expected commencement and completion dates of the works, including the estimated duration of time that the works will be carried out in a water body;

(i) whether physical or other measures will be required to meet clause (a) in Part 1 of Schedule 2.

SCHEDULE 2

Plans
(Section 6)

PART 1
DESIGN AND CONSTRUCTION STANDARDS

Design and construction standards that must be met for the purposes of this Code of Practice:

(a) Upon completion of the works, the quantity and productive capacity of the aquatic environment, including fish habitat, at and adjacent to the pipeline crossing or telecommunication line crossing site must be equivalent to or exceed that which existed prior to commencing the works;

(b) Upon completion of the works, the hydraulic, hydrologic or hydrogeological characteristics must be restored to a condition that is similar to the condition that existed prior to commencing the works;

(c) All pipes for pipeline crossings must be installed at an elevation that is below the one in fifty year bed scour depth of the water body except for pipes under clause (d);

(d) All pipes for pipeline crossings that will carry a substance that causes or may cause an adverse effect on the aquatic environment, including fish habitat, must be installed at an elevation that is below the one in one hundred year bed scour depth of the water body;

(e) Measures must be implemented to avoid harm to or destruction of fish and fish eggs, and the harmful alteration, disruption or destruction of fish habitat;

(f) Upstream and downstream fish migrations must not be impeded over the life span of the pipeline crossing or telecommunication line crossing, following completion of the works;

(g) The flow of the water body must be maintained at the pipeline crossing or telecommunication line crossing site at all times through or around the crossing;

(h) Measures must be implemented to minimize the duration and amount of disturbance of the bed and banks of the water body;

(i) Measures must be implemented to prevent the deposition into the water body of deleterious substances and materials that are toxic to fish and other aquatic organisms;

(j) Measures must be implemented to prevent the transfer of biota that is not indigenous to the environment at the pipeline crossing or telecommunication line crossing site;

(k) Measures must be implemented to minimize erosion and sedimentation into the water body;

(l) Measures must be implemented to permanently stabilize all disturbed areas on the pipeline crossing or telecommunication line crossing site sloping to the water body within one full growing season;

(m) Debris disposal, cleanup and initial stabilization must be carried out as part of the works.

PART 2
REQUIREMENTS FOR INFORMATION AND WRITTEN SPECIFICATIONS FOR PLANS OF WORKS, FROM OWNER OR PROFESSIONAL ENGINEER

Written specifications that must be provided under section 6(1) must

(a) meet the design and construction standards specified in Part 1 of this Schedule;
(b) incorporate any written specifications and recommendations prepared by a qualified aquatic environment specialist for the works; and
(c) include the design specifications of the works and other information related to the works, as follows:
  (i) information on a page which is a minimum size of 21 centimetres by 27 centimetres, a minimum scale of 1:15000 and that includes:
    (A) a map, diagram, or air photo that shows the location of the works in relation to the boundaries of the quarter section that the pipeline crossing or telecommunication line crossing will be located in, the legal description of the land, and the UTM coordinates, if available, on which the pipeline crossing or telecommunication line crossing is located;
    (B) the name of the water body that is crossed, if named;
    (C) the substances carried by or to be carried by the pipe for a pipeline crossing;
    (D) the type of cable, conduit or arrangement of lines or other conductors for a telecommunication line crossing;
    (E) the diameter of the pipe for a pipeline crossing and the diameter of the cable, conduit or arrangement of lines or other conductors for a telecommunication line crossing;
    (F) the burial depth of the pipe for a pipeline crossing, and of the cable, conduit or arrangement of lines or other conductors for a telecommunication line crossing, shown through the width of the active floodplain of the water body;
    (G) the setback distance to the pipe, cable or conduit sag bends on each side of the water body;
    (H) all surveyed and unsurveyed profile and cross-sectional drawings required for the design;
  (ii) for a pipeline crossing, an explanation of rationale and the calculations for the design of scour depth at the pipeline crossing;
  (iii) any hydraulic, hydrologic, or hydrogeologic analysis performed for the design of the works; and
  (iv) a description of any other specifications for the works that were not provided on the plan or that the owner or professional engineer considers appropriate.

SCHEDULE 3

Construction Conditions
(Section 8)

PART 1
CLASS A WATER BODIES

Where a map or section 7 of this Code of Practice designates the water body under which the proposed pipeline crossing or telecommunication line crossing is or will be located as a **Class A** water body, the construction methods and conditions specified in section 8 and 9 of this Code of Practice must be met.

PART 2
CLASS B WATER BODIES

Where a map or section 7 of this Code of Practice designates the water body under which the proposed pipeline crossing or telecommunication line crossing is or will be located as a **Class B** water body, and where as part of the trenchless method, pressurized drilling fluids are used, in addition to the requirements under section 8 and 9 of this Code of Practice, the following requirements must be met:

(a) measures must be taken to prevent the drilling fluids and additives from entering any water body;
(b) the water body must be monitored for introduction of drilling fluid into the water body;
(c) contingency measures and frac-out monitoring measures, as specified in the plan under section 6, must be on-site in the possession of the person responsible for carrying out the works;
(d) where seepage into the water body of drilling fluids occurs or is detected as possibly occurring:
    (i) the drilling operation must be ceased until the frac-out contingency measures specified in the plan are implemented,
    (ii) the Director must be notified immediately in accordance with section 11 of this Code of Practice, as if there were a contravention; and
(e) drilling wastes must be disposed of according to the requirements of the Alberta Energy and Utilities Board Guide G-50 and Interim Directive ID 99-05.

PART 3
CLASS C WATER BODIES

Where a map or section 7 of this Code of Practice designates the water body under which the proposed pipeline crossing or telecommunication line crossing is or will be located as a **Class C** water body, in addition to the requirements under section 8 and 9 of this Code of Practice, the following requirements must be met:

(a) where an isolation method is used,

(i) the isolation method must be carried out in a manner that isolates the instream construction site and eliminates the flow of surface water through the area of the trench that has or will be excavated in the water body;

(ii) the water diverted around the crossing site must be returned to the water body downstream of the crossing site;

(iii) where ice is present on the water body, the diverted water must be returned to the water body downstream of the crossing site, under the ice;

(iv) the trench must be backfilled:

(A) with material of the same quality that was removed; and

(B) with a minimum thickness of 0.5 metres of clean granular material at the top of the finished trench, where in the excavation of the trench, granular material is encountered;

(b) during the carrying out of the works, any fish that are found within the isolated portion of the crossing site are to be removed, without harm or destruction, to an area of the water body outside the construction site that is located immediately adjacent to the pipeline crossing or telecommunication line crossing;

(c) during those periods of time within a restricted activity period, when fish are spawning or migrating, an isolation method must not be used for longer than three consecutive days, unless upstream and downstream fish migration is accommodated;

(d) during any period of time outside a restricted activity period, an isolation method must not be in place for longer than 14 consecutive days unless upstream and downstream fish migration is accommodated and all structures associated with the method must be completely removed after completion of the works;

(e) any water entering an intake of a bypass pumping system must pass through a screen with openings that are no larger than 2.54 millimetres and at a velocity that does not result in the entrainment and entrapment of fish or fish fry;

(f) any accumulations of silt and sediment within the isolation area resulting from the works in the trench must be removed to a location where the materials will not enter a water body;

(g) special conditions must be met for the Beaver, Vermilion and Battle rivers, as specified on the appropriate maps.

PART 4
CLASS D WATER BODIES (Uncoded water bodies)

Where a map or section 7 of this Code of Practice designates a water body under which the proposed pipeline crossing or telecommunication line crossing is or will be located as a **Class D** water body, and where an open cut method is used, in addition to section 8 and 9 of this Code of Practice, the following requirements must be met:

(a) the trench must be backfilled with material of the same quality and gradation that was removed;

(b) where the width of the crossing measured between the banks of the water body is less than 15 metres, all material excavated from the bed or banks of the water body must be removed and stored at a location out of the water body until the materials can be backfilled into the trench;

(c) where the width of the crossing measured between the banks of the water body is equal to or greater than 15 metres, and it is necessary to stockpile the material excavated from the bed in the water body, the material must be stockpiled in the water in a manner that avoids areas of highest water velocity, and does not windrow the material across the channel perpendicular to the flow of water;

(d) if the water body is flowing, the channel must not be constricted by more than two thirds (2/3) of its width during completion of the works.

SCHEDULE 4

Qualified Aquatic Environment Specialist's Written Specifications and Recommendations

1(1) The written specifications and recommendations of a qualified aquatic environment specialist referred to under this Code of Practice must include:

(a) specifications and recommendations on any measures required to meet the requirements of clause (a) in Part 1 of Schedule 2 of this Code of Practice;

(b) a copy of information gathered and assessments made by the qualified aquatic environment specialist regarding the aquatic environment, including fish populations and habitat, in preparing the specifications and recommendations, including but not limited to

(i) a list of all existing information, published and unpublished reports reviewed,

(ii) any new information gathered through field assessments, and

(iii) any reports prepared by the qualified aquatic environment specialist;

(c) the crossing location, including the legal description, and the UTM coordinates;

(d) a summary of physical and biological data pertaining to the water body at the pipeline or telecommunication line crossing location including,

(i) all fish species that are present or could be present at any time during the year,

(ii) aquatic species of special concern, including rare, endangered, threatened or vulnerable species,

(iii) a description of existing aquatic and riparian fish habitat,

(iv) a description of the hydrological characteristics of the water body, and

(v) any other relevant information regarding the aquatic environment, including fish populations and habitat;

(e) a description of any field assessment study sites, the methods used during field assessments and dates and times of field assessments;

(f) a description of the anticipated effects of the works on the water body and aquatic environment;

(g) the name and signature of the qualified aquatic environment specialist and of the persons responsible for the field assessments;

(2) A field assessment for pipeline crossings and telecommunication line crossings must be conducted

(a) where in the opinion of the qualified aquatic environment specialist, the required information does not exist to prepare the written specifications and recommendations in order to meet the requirements of clause (a) in Part 1 of Schedule 2, including where

(i) an alternative crossing method to that specified as a preferred method in section 8 of this Code of Practice is used, and

(ii) when works occur or are anticipated to occur in a water body during a period of fish spawning, egg incubation, fry emergence and early fry development; and

(b) when repair or maintenance of an existing pipeline crossing or telecommunication line crossing is carried out in or under a Class A water body.

SCHEDULE 5

PART 1
DIRECTORS FOR THIS CODE OF PRACTICE

DIRECTOR and REGION	ADDRESS	FAX	TELEPHONE
Regional Water Manager, Northwest Boreal Region **Management Areas:** Peace River, Grande Prairie and High Prairie	Alberta Environment Natural Resources Service Northwest Boreal Region Bag 900-5, Provincial Building 9621 - 96 Avenue **Peace River**, AB, T8S 1T4	780 624-6335	780 624-6167
Manager, Regional Support, Northeast Boreal Region **Management Areas:** Fort McMurray, Lac La Biche, and St. Paul	Alberta Environment Natural Resources Service Northeast Boreal Region 7th Floor, Oxbridge Place 9820 -106 Street **Edmonton**, AB, T5K 2J6	780 422-0528	780 427-5296
Manager, Regional Support, Northern East Slopes Region **Management Areas:** Edson and Stony Plain	Alberta Environment Natural Resources Service Northern East Slopes Region 52322 Golf Course Road **Stony Plain**, AB, T7Z 2K9	780 963 4651	780 963 6131
Manager, Regional Support, Parkland Region **Management Areas:** Camrose, Red Deer and Rocky Mountain House	Alberta Environment Natural Resources Service Parkland Region 501, Provincial Building 4920 - 51 Street **Red Deer**, AB, T4N 6K8	403 340-7662	403 340-7654
Regional Water Manager, Bow Region **Management Areas:** Calgary, Canmore and Brooks	Alberta Environment Natural Resources Service Bow Region 2nd Floor, 3115 - 12 Street NE **Calgary**, AB, T2E 7J2	403 297-2749	403 297-6582
Regional Water Manager, Prairie Region **Management Areas:** Pincher Creek, Lethbridge and Medicine Hat	Alberta Environment Natural Resources Service Prairie Region Provincial Building 293, 200 - 5 Avenue, S. **Lethbridge**, AB, T1J 4C7	403 381-5337	403 382-4254

PART 2
REGIONAL BOUNDARIES MAP

SCHEDULE 6

Maps

1. Peace River Management Area
2. Grande Prairie Management Area
3. High Prairie Management Area
4. Edson Management Area
5. Stony Plain Management Area
6. Pincher Creek Management Area
7. Lethbridge Management Area
8. Medicine Hat Management Area
9. Fort McMurray Management Area
10. Lac La Biche Management Area
11. St. Paul Management Area
12. Camrose Management Area
13. Red Deer Management Area
14. Rocky Mountain House Management Area
15. Calgary Management Area
16. Canmore Management Area
17. Brooks Management Area

Alberta
ENVIRONMENT

GUIDE

TO THE CODE OF PRACTICE FOR

PIPELINES AND TELECOMMUNICATION LINES

CROSSING A WATER BODY,

INCLUDING GUIDELINES FOR COMPLYING

WITH THE CODE OF PRACTICE

APRIL 2000

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GUIDE TO THE CODE OF PRACTICE FOR PIPELINES AND TELECOMMUNICATION LINES CROSSING A WATER BODY

INTRODUCTION

Under the *Water Act* (the Act), a code of practice sets out the regulatory mechanism to govern a certain activity or diversion of water included in the overall regulatory scope of the Act. The Code of Practice for Pipelines and Telecommunication Lines Crossing a Water Body (the Code of Practice) is incorporated in the Water (Ministerial) Regulation under the authority of the Act and became effective on April 1, 2000.

The potential harmful effects of pipeline or telecommunication line activity within a water body can be eliminated or minimized by identifying the objectives that are to be met when such an activity is undertaken. Objectives set out in the Code of Practice are based on the principles of sustainable water management. These principles are:

- Water must be managed sustainably.
- Water is a vital component of the environment.
- Water plays an essential role in a prosperous economy and balanced economic development.
- Water must be managed using an integrated approach with other natural resources.
- Water must be managed in consultation with the public.
- Water must be managed and conserved in a fair and efficient manner.

The Code of Practice establishes the objectives, standards and conditions to be met when undertaking the activity of constructing or removing a pipeline or telecommunication crossing of a water body. Alberta Environment, as the government department responsible for the administration of the Act, establishes the environmental objectives, standards and conditions, monitors and audits for compliance, and enforces non-compliance with the Code of Practice requirements. An owner/proponent of a pipeline or telecommunication line crossing is responsible for meeting all requirements set out in the Code of Practice, and bears responsibility for obtaining appropriate information and advice from appropriate professionals to meet the objectives, standards and conditions of the Code of Practice.

Persons responsible for the placement, construction, installation, maintenance, replacement or removal of a pipeline or telecommunication line crossing a water body must ensure their activities are now in compliance with the requirements of the Code of Practice. Operating under and following the requirements set out in the Code of Practice allows an owner/proponent to proceed with the pipeline or telecommunication line crossing a water body without the requirement to obtain an approval under the Act (as was the previous requirement).

This Guide is intended to assist those responsible for a pipeline or telecommunication line crossing in meeting their obligations and the requirements of the Code of Practice.

TOPICS IN "CODE OF PRACTICE	WHAT IT MEANS
What activities does this Code of Practice apply to?	This Code of Practice applies to **"any works."** This includes placing, constructing, installing, maintaining, replacing or removing a pipeline crossing or telecommunication lines crossing. A **"pipeline crossing"** is defined in section 1(2)(m), and generally means a pipe and associated structures under a water body. A **"telecommunication lines crossing"** is defined in section 1(2)(s), and generally means a pipe, cable or other arrangement of lines of wire or conductors for communication transmittal and receipt under a water body. It also includes associated structures. This Code of Practice does not apply to overhead pipeline or telecommunication line crossings. As well, the Code of Practice does not cover any measures or physical structures outside the pipeline right-of-way required to meet clause (a) of Part 1, Schedule 2 of the Code of Practice. Compliance with the Code of Practice does not relieve a person of their obligations and responsibilities under other legislation. Regulatory approvals may be required under provincial legislation such as the *Public Lands Act*, *Environmental Protection and Enhancement Act* or under federal legislation such as the *Fisheries Act* and the *Navigable Waters Protection Act*.
Definitions [s. 1] Terms that are used in this Code of Practice are defined in section 1.	If a term is used in either the *Water Act* or the Water (Ministerial) Regulation and is not defined in this Code of Practice, those terms will be used as defined in the *Water Act* or the Water (Ministerial) Regulation. If a term is used in either the *Water Act* or the Water (Ministerial) Regulation and is defined in this Code of Practice, the term will be used as defined in this Code of Practice.
Definition, "this Code of Practice" [s. 1(2)(a)]	An owner and person carrying out a works must comply with the most recent version of the Code of Practice for Pipelines and Telecommunication Lines Crossing a Water Body. To secure a copy of the most recent Code of Practice, contact the appropriate Director, as specified in Schedule 5 of this Code of Practice.
Definition, "productive capacity" [s. 1(2)(o)]	The term "productive capacity" is used in this Code of Practice in the context of fish habitats that comprise the aquatic environment. Under this Code of Practice, fish and fish habitat are the primary indicators of the "productive capacity" of the aquatic environment that should be considered in meeting clause (a) of Part 1 of Schedule 2. Measures to meet clause (a) of Part 1 of Schedule 2 include, but not limited to, fish habitat mitigation and compensation measures that would help to achieve the objective of "no net loss" of productive fish habitat as described in "A Fish Conservation Strategy for Alberta, 2000 – 2005".
Definition, "fish" [s. 1(2)(f)]	For the purposes of this Code of Practice, the definition of fish encompasses the definition of fish under the federal *Fisheries Act*. In addition to fish used for sustenance, recreational or commercial purposes, fish species of special concern, including rare, endangered, threatened or vulnerable species, are included in the definition.

TOPICS IN "CODE OF PRACTICE	WHAT IT MEANS
Definition, "Director" [s. 1(2)(d)]	Schedule 5 of this Code of Practice sets out which Director should be notified. Addresses, faxes and telephone numbers are also listed. The term "Director" as used in this Code of Practice may not be the same as an administrative "Director" within Alberta Environment.
Definition, "water body" [s. 1(2)(v)]	The term "water body" is defined in this Code of Practice to mean a water body with defined bed and banks whether or not water is continuously present but does not include fish bearing lakes. Under this definition, a fen or a muskeg that does not have a defined bed and bank is not captured. The Code of Practice does not apply to crossings of a fen or muskeg of this nature.
What is a "qualified aquatic environment specialist? [s. 1(2)(q)]	A qualified aquatic environment specialist may include a private individual, consultant or employee of a company that owns, plans or constructs pipeline crossings. The specifications and recommendations prepared by the qualified aquatic environment consultant under the Code of Practice would include but not be limited to mitigation and compensation measures related to the harmful alteration, disruption and destruction of fish habitat. The qualified aquatic environment specialist determines what information and assessments are needed to meet the requirement of the Code of Practice. In the event of enforcement actions resulting from contraventions of the Code of Practice, a qualified aquatic environment specialist should be able to defend and rationalize any specifications and recommendations prepared on behalf of the owner.
Terminology: **"Dry" and "Frozen"**	The Code of Practice allows for the construction and installation of a pipeline or telecommunication line crossing under certain construction conditions when a water body is "dry" or "frozen". In these circumstances, a water body can be considered "dry" when there is no free standing water covering the bed of the water body at the crossing site or if there is insufficient water in quantity or depth to support fish. "Frozen" means frozen to the bed of the water body or frozen with no water between the ice and the bed of the water body.
What is the difference between the Code of Practice and the Guidelines contained in the Guide to the Code of Practice?	The Code of Practice consists of section 1, Definitions, to section 16, Code of Practice Amendment, inclusive, and Schedules 1 to 6, inclusive. The legal obligations of an owner and a person carrying out a works for a pipeline and telecommunication line that crosses a water body are set out in this Code of Practice. The Guidelines contained within the Guide to the Code of Practice are the best management practices for carrying out the legal obligations set out in the Code of Practice, and are provided only to assist users. The Guidelines are not intended to apply to all situations and if there is another way of meeting obligations under the Code of Practice, the Guidelines do not have to be followed.

TOPICS IN "CODE OF PRACTICE	WHAT IT MEANS
Notice to the Director [s. 3 and 4]	The owner of the pipeline or telecommunication line is required to provide notice to the appropriate Director (as listed in Schedule 5). Notice must be in writing and given 14 days before starting work. Any changes to these notice requirements such as reducing the 14 day prior notice requirement must be secured from the Director (as listed in Schedule 5) in writing. Notice must contain the information listed in Schedule 1. If the works are not completed within the time specified in the notice, that notice expires and a new notice must be provided. This new notice must contain: - the new start date, - the time period when there will be activity in the water body, - any changes in information from the first notice, - the new expected completion date.
Notice in Emergencies [s. 5, clauses (a), (c), and (d) of Schedule 1]	In some cases, where there is an emergency, it may not be feasible to provide the Director notice before starting work. In these emergency situations, a person responsible must notify the Director (as outlined in Schedule 5) within 24 hours of becoming aware of the emergency. Notice about an emergency must contain the following information: - name, address and phone number of an owner of the pipeline or telecommunication line crossing, - name and phone number of the contact person, - the diameter of the pipe, conduit, cable or arrangement of lines to be (or that was) constructed, - a map, diagram or air photo, as described in clause (b) of Schedule 1, - any other information on the emergency that is available. Within 30 days of completing works to address a emergency, additional information as specified in section 5 (3) of the Code of Practice is required including an indication whether the works incorporated the specifications and recommendations of a qualified aquatic environment specialist. Given the nature of emergencies that may occur, obtaining the specifications and recommendations of a QAES is not a requirement under the Code of Practice but should be obtained in fish bearing water bodies wherever possible.

TOPICS IN "CODE OF PRACTICE	WHAT IT MEANS
Plans [s. 6 and Schedule 2]	The owner of a pipeline or telecommunication line that will cross a water body is required to prepare a plan for the proposed work. In selecting a crossing site and in preparing a plan to comply this Code of Practice, it is also necessary to meet other resource and land management requirements (i.e. *Public Lands Act*). This plan is to be prepared before written notice is given to the Director. A plan for a pipeline will consist of: - a description of the construction method and conditions to be used, determined in accordance with section 8 and Schedule3, including the specifications and recommendations of a qualified aquatic environment specialist where required, - the specifications of a professional engineer that are prepared in accordance with Part 2 of Schedule 2, - contingency measures to deal with potential problems, - monitoring plans. A plan for a telecommunication line will consist of: - a description of the construction method and conditions to be used, determined in accordance with section 8 and Schedule3, including the specifications and recommendations of a qualified aquatic environment specialist where required, - the specifications prepared by the owner in accordance with Part 2 of Schedule 2, - contingency measures to deal with potential problems, - monitoring plans. These plans will be prepared to: - meet the design and construction standards outlined in Part 1 of Schedule 2, - be consistent with the Class of water body in which the works will take place.
Certification Regarding Plans for a Telecommunication Lines Crossing [s. 9(3)]	In addition to preparing the plans as outlined above, the owner of a telecommunication lines crossing must certify that the information and written specifications for the works that is contained in the plan meets the required design and construction standards. The required design and construction standards are set out in Part 1 of Schedule 2.
Removal of a Pipeline or Telecommunication Lines Crossing	If a pipeline or telecommunication line crossing must be removed during abandonment, the following must be done: - prepare a plan containing the information contained in section 6, - provide notice to the Director under section 3, - the owner must certify that the design and construction standards outlined in Part 1 of Schedule 2 have been met in preparing the plan.

TOPICS IN "CODE OF PRACTICE	WHAT IT MEANS
Maps and class of water bodies [s. 7]	A map that is listed in Schedule 6 will indicate what the class of a water body is. Determination of the class of a water body also determines the construction method, timing and conditions under which the pipeline or telecommunication line crossing is constructed or removed. The Code of Practice applies to both mapped and unmapped water bodies. Due to the large scale of the maps, there are many water bodies that are not shown on the maps. The Code of Practice outlines how the class of an unmapped water body is determined. The class of water body that is determined based on the "sensitivity" of fish habitats and their known distribution. The sensitivity for the class of water body is as follows: Class A – highest sensitivity; habitat areas are sensitive enough to be damaged by any type of activity within the water body; known habitats in water body critical to the continued viability of a population of fish species in the area. Class B – high sensitivity; habitat areas are sensitive enough to be potentially damaged by any type of activity within the water body; habitat areas important to continued viability of a population of fish species in the area. Class C – moderate sensitivity; habitat areas are sensitive enough to be potentially damaged by unconfined or unrestricted activities within a water body; broadly distributed habitats supporting local fish species populations. Class D - low sensitivity; fish species as defined under this Code of Practice not present. The Code of Practice references a distance of 2 km in determining the class of the water body. The 2 km distance refers to a "length of stream" distance measurement.
Construction Methods and Conditions [s. 8]	The Code of Practice sets out the construction methods and conditions under which pipeline and telecommunication crossings are to be carried out. Other than a situation where a crossing is within a Class A water body, the owner of a crossing may choose to follow the construction methods and conditions set out in the Code of Practice. Alternatively, if the owner determines the outlined construction method is not technically or environmentally feasible, the owner may choose an alternate construction method upon the specifications and recommendations of a qualified aquatic environment specialist. Alternate methods that do not require the specifications and recommendations of a qualified aquatic environment specialist are also provided for.

ICS IN "CODE OF PRACTICE	WHAT IT MEANS
icted Activity Period [s. 9]	Restricted activity periods are times when works that disrupt the bed or banks of a water body must be avoided. Maps under this Code of Practice identify restricted activity periods for mapped Class B and Class C water bodies. The restricted activity period for a Class A water body is determined by a qualified aquatic environment specialist. Restricted activity periods do not exist for Class D water bodies. The Code of Practice sets out how restricted activity periods for unmapped water bodies may be determined. The restricted activity period must be adhered to in carrying out the pipeline or telecommunication line crossing. If the pipeline or telecommunication line crossing is to be carried out within a restricted activity period, the recommendations and instructions of a qualified aquatic environment specialist area required unless specified otherwise under the Code of Practice.
fication of Works [s. 10]	Upon completion of the pipeline or telecommunication line crossing, the owner of the crossing must certify the crossing was completed according to the plans prepared for the crossing. The owner retains this certification in their records.
rting [s. 11]	If there is contravention of the Code of Practice, a person involved in carrying out a works must report details of the contravention and the possible environmental impacts within 24 hours. A followup written report is required within 7 days of the report of the contravention.
d Keeping [s. 12]	The owner responsible for a works must retain records, including plans, photographs and certifications, for a period of one year following the abandonment or removal of the pipeline or telecommunication crossing.
his Code of Practice Comes into Force [s. 15]	The Code of Practice comes into force on April 1, 2000.
cement of this Code of Practice	Monitoring for compliance with the Code of Practice on intended crossings will be done by Alberta Environment.

Code of Practice for Pipeline and Telecommunications Crossing of Water Bodies
Applicability of
Class of Water Bodies – Requirements and Options

Water Body Class (Mapped and Coded)	Code of Practice Specification	Actions under The Code of Practice	Options provided for under the Code of Practice
Class "A"	• No new crossings • Maintenance and replacement of existing crossings only	• Replacement with same size or smaller diameter pipeline. • A qualified aquatic environment specialist (QAES), with appropriate field assessment, determines timing of activity. • Trenchless method may be used without instructions of a QAES.	• Not applicable – no other options allowed for under the Code of Practice.
Class "B"	• Trenchless method of construction	• Trenchless method of constructing pipeline at any time without the requirement of a QAES.	• Trenchless may be determined as being not technically or environmentally feasible. • If so, then can move to isolation, or to open-cut method where isolation is not feasible, upon QAES assessment and recommendations. • Restricted activity period applies for isolation and open-cut crossings. • Habitat mitigation/compensation measures may be necessary.

Class "C"	• Isolation method of construction	• Isolation method may be used without requirement of a QAES, outside of the restricted activity period. • Open-cut method allowed where water body is frozen or dry without the instructions of a QAES.	• Isolation may be determined as being not technically or environmentally feasible. • If so, then can move to open-cut method upon QAES assessment and recommendations. • Isolation method within the restricted activity period requires QAES assessment and recommendations. • Mitigation measures may be necessary. • Trenchless method used at anytime without requirement for QAES involvement.
Class "D"	• Open-cut method may be used.	• No requirement for a QAES and no restricted activity periods.	• No requirements for a QAES and no restricted activity periods. • Trenchless or isolation methods may be used.
All **mapped and uncoded** water bodies within 2 km of entering a Class "A", "B" or "C" mapped water body.	• The water body takes on the same class as the receiving water body (i.e. will take on the specified Class A, B or C conditions and construction methods).	• Methods and conditions as per the requirements of the appropriate class of water body.	• As per the requirements of the appropriate class of water body.
All **unmapped** water bodies within 2 km of a Class "A", "B" or "C" water body.	• The unmapped water body takes on the same class as the receiving water body.	• Methods and conditions as per the requirements of the appropriate class of water body.	• As per the requirements of the appropriate class of water body.

Unmapped water body entering a Class "A" water body and the crossing site is greater than 2 km from the Class "A" water body.	• The unmapped water body is classed as Class "B" and takes on the restricted activity period of the nearest mapped Class "B" or "C" water body entering or downstream of the Class "A" water body.	• Methods and conditions as per the requirements of the appropriate class of water body.	• As per the requirements of the appropriate class of water body.
Unmapped water body entering a Class "B" water body and the crossing site is greater than 2 km from the Class "B" water body.	• The unmapped water body is classed as being Class "C" and takes on the same restricted activity period of the Class "B" receiving water body.	• Methods and conditions as per the requirements of the Class "C" water body.	• As per the requirements of the Class "C" water body.
Unmapped water body entering a Class "C" water body and the crossing site is greater than 2 km from the Class "C" water body.	• The unmapped water body is classed as being Class "C".	• Methods and conditions as per the requirements of the Class "C" water body.	• Isolation method of construction allowed year round in these unmapped water bodies without QAES assessment if no fish presence has been documented. • If no fish presence documented, then as per the requirements of the Class "C" water body.
Unmapped water body entering a Class "D" water body and the activity area is greater than 2 km from the Class "D" water body.	• The unmapped water body is classed as being Class "D".	• Methods and conditions as per the requirements of the Class "D" water body.	• As per the requirements of the Class "D" water body.

Unmapped water body entering any fish-bearing lake.	• The unmapped water body is classed as being Class "C" water body and takes on the restricted activity period of the nearest mapped water body entering the lake, the mapped outlet, or nearest Class "C" water body.	• Methods and conditions as per the requirements of the Class "C" water body.	• As per the requirements of the Class "C" water body.

Notice under Code of Practice - *Water Act*

Alberta ENVIRONMENT

This notification is for the placement, construction, installation, maintenance, replacement, or removal of Pipeline or Telecommunication Line Crossings

Documents or information provided to Alberta Environment pursuant to section 15(1)(a) of the Water (Ministerial) Regulation are public records which are accessible by the public.

Check one or more of the following to indicate type of activity

☐ **Pipeline Crossing:** **Installation** ☐ **Removal** ☐ **Maintenance** ☐ **File No.:** _____

☐ **Telecommunication Line Crossing:** **Installation** ☐ **Removal** ☐ **Maintenance** ☐

Brief Description:

Owner of Pipeline or Telecommunication Line Crossing

Print Name or Company Name:		**Home/Cell. Telephone:** ( )	**Bus. Telephone:** ( )	**Electronic Mail Address:**
Address (Street, PO Box, etc.):	**Place, Province:**	**Postal Code:**	**Fax:** ( )	

Person Responsible or Contact Person (if not the same as Owner):

Print Name or Company Name:		**Home/Cell. Telephone:** ( )	**Bus. Telephone:** ( )	**Electronic Mail Address:**
Address (Street, PO Box, etc.):	**Place, Province:**	**Postal Code:**	**Fax:** ( )	

Under Schedule 1 of the Code of Practice, a location plan, diagram, or an aerial photograph showing the following criteria must accompany this notice:

(a) minimum size of 21 cm by 27 cm and is a scale of 1:15,000 or larger,

(b) where the pipeline crossing or telecommunication line crosses the water body in relation to the boundaries of the quarter section that the crossing is located in, including the legal description of the land and,

(c) name of each water body to be crossed. (if applicable)

See next page

Please attach a separate page for additional crossings or information

Location of Crossing(s) (if more crossings are proposed, attach a separate list) ¼ sec twp rge M	Name of Water Body, if known	Diameter of pipeline and/or telecommunication line (cable, pipe, conduit)	Substance to be conveyed by the pipeline	Method of installation, repair, or removal	Proposed Date of placement, construction, installation, maintenance, replacement, or removal	Maximum time the works will occur in the water body	Are recommendations and specifications prepared by a qualified aquatic environment specialist incorporated in the plans Yes ☐ No ☐ If yes, enter the name of the specialist and, if applicable, the company name below Was a less preferred crossing chosen? Yes ☐ No ☐ If yes, describe reason(s):

Note: The Director may ask for other information required by the Code of Practice including detailed design plans for the construction, assessments, and reports.

Will physical or other measures be required to meet clause (a) in Part 1 of Schedule 2? Yes ☐ No ☐

Signature of owner of/person responsible for the crossing:

Dated	Signature	Print Name	Title

If applicable, request to change 14-day notification requirement to _____ days.

Change of notification period approved by the Director: _____ Director's Signature _____ Dated

Return the completed form to the appropriate Alberta Environment regional office (call the regional office for the location of area offices):

Northwest Boreal Region
Bag 900 – 5, Provincial Building
9621 – 96 Avenue
Peace River, AB T8S 1T4
Telephone (780) 624-6167
Fax: (780) 624-6335

Northeast Boreal Region
7th Floor, Oxbridge Place
9820 - 106 Street
Edmonton, AB T5K 2J6
Telephone: (780) 427-5296
Fax: (780) 422-0528

Northern East Slopes Region
Natural Resources Service
52322 Golf Course Road
Stony Plain, AB T7Z 2K9
Telephone: (780) 963-6131
Fax: (780) 963-4651

Parkland Region
5th Floor, Provincial Building
4920 - 51 Street
Red Deer, AB T4N 6K8
Telephone: (403) 343-7666
Fax: (403) 340-7662

Bow Region
Natural Resources Service
200, 3115 - 12 Street, NE
Calgary, AB T2E 7J2
Telephone: (403) 297-6582
Fax: (403) 297-2749

Prairie Region
2nd Floor, Provincial
200 - 5 Avenue, South
Lethbridge, AB T1J 4L1
Telephone: (403) 382-4254
Fax: (403) 381-5337

GUIDELINES FOR COMPLYING WITH THE CODE OF PRACTICE FOR PIPELINES AND TELECOMMUNICATION LINES CROSSING A WATER BODY (the "Code of Practice")

NOTE: These Guidelines identify measures and best management practices to assist the user in meeting the objectives and conditions of the Code of Practice and do not form part of the Code of Practice

Guidelines Applicable to all Crossings of Water Bodies as defined under the Code of Practice

1. Measures to prevent deleterious materials or materials toxic to aquatic organisms from being deposited in the water body and to prevent the transfer of biota (as required by clause (i) and (j) in Part 1 of Schedule 2 of the Code of Practice) include, but not limited to:
   (a) inspecting equipment and, as necessary, repairing equipment to stop any leaks of oil and other fluids (non-toxic hydraulic fluids such as vegetable based fluids are recommended),
   (b) cleaning and freeing equipment of external grease, oil and other fluids prior to the equipment entering the water body,
   (c) cleaning and freeing equipment of all mud and dirt prior to the equipment entering the water body, or the area adjacent to the water body, and before the equipment exits areas adjacent to the water body upon completion of instream works, to prevent the transfer of biota not indigenous to the crossing site. Biota of concern include, but are not limited to, plants identified under the *Weed Control Act*, and diseases or alien organisms such as Whirling Disease. It is not necessary to clean equipment after completion of instream works if the equipment is being moved to another instream site on the same water body or a tributary of the same water body,
   (d) storing fuel and servicing and refuelling equipment in a manner that prevents fuel and equipment fluids from entering the water body, and
   (e) ensuring that operators involved in the water body crossing are trained and equipped to contain spills or leakage from equipment.

2. Measures to minimize sediment from entering water in the water body as required by clause (k), Part 1 of the Code of Practice include but are not limited to:
   (a) managing the flow of surface and subsurface water in and around the crossing,
   (b) immediately installing temporary erosion control measures which remain in place until vegetation or other long-term erosion management methods are fully established and functioning,
   (c) stabilizing all disturbed areas using measures including, but not limited to, sloping, using silt fencing, armouring, installing geotextile fabric blankets, planting approved seed mixtures or vegetation,
   (d) placing excess material in a location where erosion into the water body will be minimized,
   (e) maintaining original groundcover vegetation by not blading, grubbing, or rooting on the banks of the water body and adjacent to the crossing site, except where required for the trench line,
   (f) preventing silt, and other materials being carried by water, from flowing along the trench into the water body, until such time as the installation of the crossing is imminent. Methods include, but not limited to,
      (i) using hard ditch blocking and pumping,
      (ii) de-watering the trench in a manner to prevent erosion and siltation of the water body by de-watering to settling ponds or to upland areas in a manner that does not have an adverse effect on any land, and
      (iii) installing adequate cross and diversion drainage on portions of the right-of-way which slope to the water body, and
   (g) referring to other appropriate methods as described in the Watercourse Crossings, 2nd Edition Nov. 1999 published by Canadian Pipeline Water Crossing Committee.

Guidelines for Trenchless Method Crossings

3. Where a trenchless method is used, it should be done in a manner that does not cause a disturbance;
   (a) in the water,
   (b) to the exposed bed or shore of the water body, or
   (c) to an area of undisturbed vegetation that measures 10 metres, or other distance as identified by the local land manager or land-use officer, from each bank of the active channel.

4. Where a trenchless method uses pressurized drilling fluids or water, the monitoring of the water body for possible frac-out should be conducted over the area that could be impacted by the frac-out. At a minimum, this monitoring should be conducted at a distance of 400 metres downstream of the crossing site.

5. Where a trenchless method uses pressurized drilling fluids or water, contingency and monitoring measures referred to in section 6(1)(b) and Part 2 of Schedule 3 of the Code of Practice should include:
   (a) instructions to be followed to monitor for potential seepage into the water body of drilling fluids or water used, including monitoring and recording drilling fluid volumes on a continuous basis during the drilling operation for the purpose of detecting seepage during and after the drilling while the risk of seepage exists, and
   (b) instructions on how to mitigate for the effect of any seepage into the water body of drilling fluids or water used.

Guidelines for Isolation Methods Crossings

6. Where an isolation method is used, measures to prevent the introduction of sediment and suspended solids into the water body should be taken, to meet the requirements of clause (k) in Part 1 of Schedule 2 of the Code of Practice, that may include but are not limited to constructing temporary isolation dams, pumping water from the trench to settling ponds or to upland areas in a manner that does not adversely affect the land, and installing the intake of any bypass pump line where it will not disturb sediments in the water body.

7. To meet the requirements of clause (k) in Part 1 of Schedule 2 of the Code of Practice, where an isolation method is used, measures should be taken to prevent erosion of the area at and surrounding the outlet of a bypass pump or dewatering pump or flume by dissipating the energy of the released water using devices that include, but are not limited to tarps, flip buckets, plates, and appropriately sized granular materials.

8. To meet the requirements of clause (g) in Part 1 of Schedule 2 of the Code of Practice, where an isolation method is used, all instream pumps should have capacity that exceeds expected flows, and backup pumps and generators shall be on site and operational if required.

9. Follow other appropriate methods as described in the Watercourse Crossings, 2nd Edition Nov. 1999, published by Canadian Pipeline Water Crossing Committee.

Guidelines for Preparation of Contingency Measures as Required in this Code of Practice

10. Contingency measures prepared under section 6(1)(b)(iii)(B) and Part 2 of Schedule 3 of the Code of Practice should identify steps and measures to be taken by the owner in the event of;
    (a) crossing method failures (i.e., situations where a trenchless or isolation method cannot be completed successfully),
    (b) emergency situations (i.e., equipment failures, adverse weather, flooding, spills, etc.), and
    (c) other occurrences or circumstances that require the owner to deviate from the proposed plan or schedule for completion of the works.

11. Contingency measures should identify, where appropriate,
    (a) alternative crossing methods, and
    (b) procedures and back-up measures for possible emergency situations.

Guidelines for Crossing Site Monitoring as Required in this Code of Practice

12. Monitoring required under the Code of Practice includes, but is not limited to:
    (a) monitoring during isolation and open cut methods to assess immediate effects of the works on the aquatic environment (e.g., measurement of sediment release),
    (b) monitoring during trenchless crossing construction to detect possible frac-out of drilling fluids, as outlined under guideline 4 and 5 above, and
    (c) post-construction monitoring to assess the condition of the crossing site and effectiveness of physical measures and other measures taken to meet the requirements of clause (a) in Part 1 of Schedule 2.

13. Monitoring during the works to measure immediate construction effects on the aquatic environment should be undertaken when the works are located in a highly sensitive aquatic environment (e.g., a Class A water body) or where an alternative to a preferred crossing method, as specified in section 8, is used (e.g., at a site where an isolation or open cut method is used in

a Class B water body, or a site where an open cut method is used in a Class C water body). The intent of this monitoring should be to quantify the effects of the works for the purpose of identifying additional physical or other measures that would be required in order for the works to meet clause (a) in Part 1 of Schedule 2 of the Code of Practice. The monitoring should be designed and conducted by a qualified aquatic environment specialist.

14. In order to meet the requirements of section 13(1) of the Code of Practice, post construction monitoring of the crossing site should be done annually, at a minimum, during the snow free season. Site inspections should be conducted more frequently (especially after high flow events) until establishment of permanent erosion control measures. Post construction monitoring should assess
    (a) the physical condition of the crossing site,
    (b) slope/bank stability,
    (c) erosion control measures,
    (d) physical integrity of restoration measures.

15. Post construction monitoring required under this Code of Practice is not intended to replace pipeline monitoring programs required through other statutes and regulations and can be conducted in conjunction with other monitoring programs where appropriate.

16. The Watercourse Crossings, 2nd Edition Nov. 1999, published by Canadian Pipeline Water Crossing Committee provide additional information and guidelines for environmental monitoring during and after completion of the works.

Guidelines for Aquatic Environment Assessments, Specifications and Recommendations

17. In addition to the information requirements identified in section 1(1)(d) of Schedule 4 of the Code of Practice, the following features should be noted:
    (a) areas of streambed groundwater upwelling and streambank seepage,
    (b) barriers to fish movement,
    (c) identification of other physical activities or natural disturbances which may have impacted the crossing site,
    (d) surrounding land use activities and description of surrounding terrain,
    (e) other environmental features or values that might be adversely affected by the works.

18. In describing the anticipated effects of the works on the water body the following should be considered by the qualified aquatic environment specialist:
    (a) the anticipated effects resulting from disturbance of the streambed, streambanks and riparian area at and adjacent to the water body,
    (b) the anticipated extent (zone of impact) of downstream sediment transport and sedimentation resulting from the works,
    (c) the anticipated effects of sediment transport and sedimentation on aquatic biota and fish habitat.

19. Recommendations developed by the qualified aquatic environment specialist for measures required to meet the requirements of clause (a) in Part 1 of Schedule 2, include but are not limited to descriptions of sediment control measures and fish habitat restoration measures.

20. Where existing fish and fish habitat data and information are deemed by the qualified aquatic environment specialist to be insufficient to complete an assessment of the potential effects of the works on the aquatic environment, the following methods should be followed where possible in designing and conducting field assessments at the crossing site:
    (a) **Study sections** – Establish a minimum of two study sections for the purpose of conducting physical and biological assessments as follows:
        (i) one, a minimum length of 100 metres, ***immediately upstream*** of the proposed crossing site
        (ii) one, a minimum length of 300 metres, or ***encompassing the entire zone of impact*** (whichever is greater), consisting of the crossing site and the area downstream of the crossing site
        (iii) establish additional study sections either upstream or downstream of the zone of impact as needed to determine the presence of fish species that could be potentially affected by the works

    (b) **Physical Assessment** - This assessment should be done to determine water body conditions and characterize fish habitat in the study sections immediately upstream of the crossing site and encompassing the zone of impact.
        (i) ***Determining the zone of impact*** - For the purpose of this assessment, the zone of impact is defined as the area of the water body where 90% of the sediment discharged as a result of the works will be deposited. Substrate sampling may be needed to determine the zone of impact and potential adverse effects of the works on the aquatic environment.

(ii) ***Physical assessment methods and parameters*** - One assessment of the upstream study section and the zone of impact study section should be conducted prior to the works. All data should be date referenced. The types and location of fish habitat in both study sections should be mapped as part of the physical assessment using an accepted habitat classification system. Generally habitat mapping should identify and document habitat types and cover composition including:

- cover provided by surface turbulence
- aquatic vegetation
- instream cover
- terrestrial canopy
- rock/boulder substrates
- under-cuts
- turbidity
- cover provided by depth
- pool/riffle/run ratio

To complement habitat mapping, establish a minimum of five cross section transects across the two study sections (two transects upstream of the crossing site, one at the crossing site, and a minimum of two in the zone of impact) and record the following:

(i) **At the crossing site**

- water velocity and discharge
- four photos at the proposed right-of-way transect; one of each bank taken from the opposite bank, one looking upstream of the crossing site, and one looking downstream of the crossing site
- water quality parameters
- water temperature and time of day reading taken
- pH, conductivity, DO, turbidity

(ii) **At each transect within each study section**

- bank full width and wetted width
- water depths at 0.25, 0.5, and 0.75 of the wetted width
- water velocity
- bottom types
- % fines, gravel, cobble and boulder
- description of both banks of the water body
- height, slope, stability

(c) **Biological Assessment** - This assessment should be done to determine the current presence/absence of fish in the water body at each study section. To account for seasonal variation, the biological assessment should ideally be conducted once in the spring, and again once in the fall, and should be conducted during that time period during which anticipated impacts of the works on fish species life stages, such as spawning and egg incubation, are best documented.

For the biological assessment:

(i) record the actual length of the study section,

(ii) using electrofishing, sample the entire length of the study section. Record the type of equipment used, and the electrofishing effort made (seconds) and catch per unit effort. Other active and passive fish capture methods may be used to augment electrofishing where required,

(iii) record all fish species captured, the number of each species and the location or habitat types where fish were captured,

(iv) record the fork length and weight of all sportfish species captured,

(v) record the gender and maturity of sportfish species if externally determinable,

(vi) note spawning potential,

(vii) note during restricted activity periods any evidence of spawning activity (redds, fish on redds, etc.), and determine where possible the presence of fish and fry at the crossing site.

21. A qualified aquatic environment specialist must obtain a Fish Research Licence from the appropriate area office of the Fisheries and Wildlife Management Division, Alberta Environment, prior to collecting fish data that may be needed in conducting field assessments. As part of the Fish Research Licence, the specialist is required to provide a copy of field data and reports to the Fisheries and Wildlife Management Division in a format specified in the licence. Field data and reports provided to the Fisheries and Wildlife Management Division will be available to the public upon request.